

CLAIMS

What is claimed is:

1. An ink-jet printer comprising:
 - a guide shaft;
 - a carriage supported by the guide shaft and reciprocating thereon;
 - an ink cartridge mounted in the carriage and having a print head to eject ink on an ink ejecting area of a printing paper;
 - a feeding roller to convey the printing paper to the print head; and
 - a waste ink-collecting unit to collect waste ink that is ejected from the print head onto an area other than the printing paper,
 - the waste ink-collecting unit comprising:
 - a waste ink-collecting tank disposed adjacent to the print head, to collect the waste ink from the print head, and
 - a collecting roller rotatably disposed at an entrance of the collecting tank, to guide the waste ink from the print head to the collecting tank.
2. The ink-jet printer of claim 1, wherein the waste ink-collecting unit further comprises a paper guide frame to guide the printing paper conveyed by the feeding roller to have a predetermined head gap with respect to the print head, and having an opening corresponding to the ink ejecting area and the collecting roller.
3. The ink-jet printer of claim 2, wherein the waste ink-collecting unit further comprises a cleaning unit to clean the waste ink on the collecting roller.
4. The ink-jet printer of claim 3, wherein the cleaning unit comprises:

a cleaning blade spaced apart from an outer circumference of the collecting roller, to scrape the waste ink from the outer circumference of the collecting roller; and a cleaning member disposed in contact with the collecting roller, to absorb the waste ink that is not removed by the cleaning blade.

5. The ink-jet printer of claim 4, wherein the cleaning blade is integrally formed with the collecting tank and protrudes from an inner circumference of the collecting tank.

6. The ink-jet printer of claim 3, further comprising a gear train to connect the collecting roller to the feeding roller, wherein the collecting roller rotates in association with the feeding roller.

7. The ink-jet printer of claim 2, wherein an inside of the collecting tank includes an ink absorbent body of a porous material, to absorb the collected waste ink in the collecting tank.

8. The ink-jet printer of claim 4, wherein the cleaning blade and the cleaning member have lengths greater than or equal to a length of the collecting roller.

9. The ink-jet printer of claim 3, wherein the collecting roller is shorter than the collecting tank in length.

10. An apparatus comprising:
a print head to eject ink towards a paper; and
a frame to guide the paper, the frame forming a hole to pass the ejected ink not received by the paper.

11. The apparatus of claim 10, wherein the paper maintains a constant head gap with the frame.
12. The apparatus of claim 10, further comprising a waste collector to collect the ink which has passed through the hole.
13. The apparatus of claim 12, wherein the waste collector comprises a first roller to receive the ink which has passed through the hole.
14. The apparatus of claim 13, wherein the waste collector further comprises a tank to collect the ink which is received by the first roller.
15. The apparatus of claim 14, wherein the waste collector further comprises a second roller to receive the ink from the first roller which is not collected by the tank.
16. The apparatus of claim 15, wherein the second roller is a sponge.
17. The apparatus of claim 13, wherein the first roller has a length longer than a width of the frame and a width of the paper.
18. The apparatus of claim 13, wherein the first roller has a length shorter than a length of the tank and a width of the paper.
19. The apparatus of claim 13, further comprising a second roller to feed the paper to the print head, the first and third rollers rotating in a same direction.

20. The apparatus of claim 15, wherein the waste collector further comprises a blade protruding from the tank to scrape the ink from the first roller.